



SRLine TFT-Monitors

USER MANUAL



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Correction Overview

Amendment to Chapter/ Page output	Issue date	Reason for change
	09.11.2009	preperation of this document, Firmware 1027
17	22.12.2009	Change DOS/Graphic (720/640 x400 x350) see ("Advanced" -> "640-720") Firmware 1032
17	23.02.2010	Firmware update 1037: extended power down to 20 sec Autoscan manual or Automode (shown as "Fixed") RGB changed to VGA
	19.04.2010	Alternating video controle eM with different OSD
	05.04.2012	corrections

General

This manual will help you in installation, assembly and use of the flat panel. Please read the entire manual once, since information relating to several chapters will only be given once. Keep this manual. Follow all instructions and warnings noted on the product itself. Do not use liquid or caustic cleaning agents. Use a moist, lint-free cloth for cleaning. Never operate the unit near water.

Never place the unit on an unstable surface. All the slots and openings on the underside and back of the device are used for ventilation, to protect it from overheating adequately. These vents must never be covered. The device shall never be placed near or on a radiator or any other source of heat. The unit always has to be connected to a power supply according to the badge on the back side of the case. Do not insert objects through the vents. Do not spill liquids on the device. Leave all repairs to qualified technical personnel.

Do not expose the device to direct sunlight.

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Introduction

This LCD display acts as a video-compatible colour display.

The monitor serves for operating digital TFT displays with resolutions of 460 x 480 up to 1920 dots x 1080 directly with the standard video signals from PC's and workstations.

A dedicated graphics card is not required. The image signal is fed through a standard monitor cable.

Video modes with a lower resolution than the TFT resolution can be expanded freely and so use the full display area of the device. By using high quality filtering the image content remains unchanged. Since the video signals from PC's and workstations are no subjects to standardization in timing, the image position on specific variants are adjusted in all parameters. All necessary settings are made via an easy-to-use OSM-Menu (On-Screen Manager) and only have to be chosen once, the selected parameters are saved.

The monitor is powered through the integrated wide-range power supply or via an external power source. Any other voltages necessary for the operation of the board and display are generated on board.

The TFT screen boasts the following characteristics:

- solid, industry-adequate construction
- equipped with touchscreen optionally
- EMC-compliant construction for increased interference immunity and reduced interference radiation, CE Marking and Declaration of Conformity for tested variants.
- compatible with industrial standard.

Definitions, abbreviations and reference documents

Definitions

Abbreviations

OSD On Screen Display

MHz Number of oscillation processes in millions of cycles per seconds

KHz Numbers of oscillation processes in thousands of cycles per seconds

Hz Number of oscillations processes in cycles per second

H-Sync Displays the beginning of the broadcast of a new line. Serves synchronization between a picture source and a receiver.

V-Sync Displays the beginning of the broadcast of a new picture. Serves synchronization between a picture source and a receiver.



European Union Declaration of Conformity



Direct current DC



Alternating current AC

Safety instructions

The TFT monitor is designed for use in industrial and commercial sectors. The one installing the device is responsible for safety and compliance with occupational safety and accident prevention regulations as well as any other statutory regulations.

Installation, setup and repair work must therefore be performed by qualified personnel only. In doing so, the following safety instructions have to be followed by all means:

- By opening the backside of the panel, live parts can be exposed. Therefore the monitor unit has to be turned off and disconnected from the power grid through appropriate measures first.
- If operating the opened device is inevitable in line with set-up and repairs, use particular caution. No modifications must be made in this situation. Thus causing short-circuits resulting in damage to various components cannot be excluded.
- For manufacturing reasons, protruding edges and surfaces on circuit boards and sheet metal parts cannot be excluded. Please handle with care to avoid injury.
- When opening the unit, make sure that no electrically conductive foreign objects, such as cuttings and screws, can enter the unit, as this may cause short-circuits resulting in serious consequences.
- The torque of the fastening screws on LCD panels should never exceed 0.39 Nm.
- For cleaning the surface of the LCD panel use a soft, dry cloth and do not use any chemical cleaning agents!

Putting the TFT-Monitor into service

Unpacking equipment

The TFT monitor is shipped in a sturdy cardboard box. The monitor is fixed by a swing-foil and secured against damage during transport. Keep all the parts at first to have a suitable transport packaging in case of a necessary return.

Check the TFT monitor and the included accessories for shipping damage. If there is noticeable damage to the device, it must not be put into service because the security could be compromised. Please contact the sender immediately.

Check the package using the delivery note.

Installing the unit

The TFT monitor must not be exposed to excessive cold, heat, moisture or dirt. The ambient conditions given in the "Technical data" must be met to maintain operational safety.



Before fixing the unit to a VESA mount check if the permissible maximum weight for the bracket indicated by the manufacturer is observed.

When mounting the device take care that adequate ventilation of the equipment unit is guaranteed.

Also, remember that the temperature in a closed housing may be much higher than the outside temperature. The thermal situation can be improved by appropriate arrangement of the installations as well as forced ventilation. Make sure the specified temperature limits are never exceeded when the unit is installed.

Make sure there is enough space for the connections and no sharp edges or corners protrude in that area. This may cause damage to the cable connections and result in a loss of function and performance.

Information on compliance with the EMC directive (CE mark)

Within the EU, there are laws regarding the observance of uniform limits concerning interference radiation and interference immunity. The TFT monitor is designed to comply with these limits. It is therefore equipped with the CE mark and comes with a certificate of conformity. Outside the EU, the relevant national regulations have to be observed.

Devices to be connected to the TFT monitor also have to comply with the regulatory limits. Only this will ensure that the entire installation complies with the statutory requirements. Make sure all devices are equipped with an appropriate mark or a manufacturer's declaration.

The connection to the connected devices must be provided via shielded cables. Cables with foil shields are less suitable than cables with braided shields and a high degree of coverage. The connector housing must be round to have connection to the cable screen.

Model variants

Productlinie	Product division	Diagonal	Version	Variation-Code 1	Variation-Code 2	Variation-Code
R-	FLAT	15	/	7	-	A
R = 19" Front	Flat = Industrie LCD	Größe (Zoll)	7			
OM = Chassis	IPC = Industrie PC			
M = Metall						

Application

Product line, product division, diagonal and version prove together the detailed name of the product group. All four positions must be filled. The variation codes define the precise equipment the monitor, so that for every single monitor an expressive article number exists. The variation codes are added according to demand one after the other (in support of the order of the variation table) to the product groups name. From every area only one variation may be used. Hence, in the result only the variations with which the respective monitor is equipped are performed.

R-FLAT 15/7-B (front operating elements)
 R-FLAT 15/7-ALD (stainless steel, touch cap. USB, DVI)
 R-FLAT 15/10024 customer variation customer code=10024)
 (next customer variations: 10024 a.)

7= Standard
8= EntryLevel from 7
4= Multi
5= microPush.
6= full device
1 = TopClean
W = Wide screen

Variation-Code	Variation	signs
M	mini front panel	rear mounting bolt
A	stainless steel	V2A
G	RAL 7032	grey
W	RAL 7035	light grey
F	RAL 9010	super white
C	RAL 7047 Fein matt	telegrey 4
E	(RAL 9006)	white aluminium / exlo.
S	RAL 9005	deep black
H	seriell	IntelliTouch SAW
h	USB	
Q	seriell	AccuTouch resistiv
q	USB	
K	seriell	kapazitiv
L	USB	
R	seriell	resistiv
N	USB	
J	seriell	ThruTouch
j	USB	
B		front controls
P	24V DC	supply voltage
p	12V DC	
Y	230 V AC	
V	Video (F-BAS, NTSC)	BNC (Chinch, S-Video)
D	digital	DVI
T	TTL-Video	CGA, EGA, MDA
X	XGA for 8" / 10" / 12"	resolution 1024 x 768

VESA-DPMS (Behaviour without video signal)

HSYNC	VSYNV	Mode
ON	ON	Normal
OFF	ON	Standby
ON	OFF	Suspend
OFF	OFF	Power Off

The monitor indicates a missing video signal when turned on via an OSD message (OSM menu, no Hsync). The LED of the OSD will change to red or flash. After a while, the flashing disappears or becomes dark and the monitor goes off. Wakeup: ≤ 6s.

Auto Signal Detection

This feature automatically detects the connected video input signal. The monitor has a VGA-entrance/DVI and optional video//Comp. Sync entrance. The controller starts with VGA, then DVI, Video (CVBS) video (SVideo). If the signals are active later, then the port scan may be within the search string. There is no priority specified here, the first signal detected remains until it becomes inactive. Until then there will be no port scan. If no signal is connected or the video signal is lost (disconnected), the monitor acts as described in VESA DPM S. This mode can only be restored by switching on-off. Unless the power-suspend-mode was chosen the last detected video source returns when connected again (picture reappears).

Features

PC signals from 640x480 bis 1920x1080 (depending on the LCD-screen) with 60 Hz V-Sync are supported.

DOS, VGA, SVGA, XGA, WXGA, SXGA, SXGA+

H-Sync: 30 KHz ~ 80 kHz

V Sync: 56 Hz~ 75 Hz

VESA mount (if available)

Mounting screws M4 x 75 mm (length = max. 10 mm!);

M8 for bigger devices.

Environmental Conditions

Operating temperature: 0 ° to +50 ° C

Storage temperature: -20 ° to +60 ° C

Humidity: 85% (no condensation)







OSD Menu-Functions

You will see a menu where you can choose between display user-modes and picture.

Select your desired setting by pushing the buttons “Up” or “Down”, reach the selected submenu by pressing “Enter”, pushing the “Exit” or the “Menu” button turns off the OSD, or a level up.

In addition, the main menu, the current line and frame frequency, and if present, displays the stored user mode. If, instead of the line or frame rate no Hsync or Vsync no display, no video signal is present. In this case, the connection should be checked for the graphics card.

Menu DISPLAY

Item		Description
Menu		Enter OSD main menu Leave sub menu Leave OSD main menu
Select		Enter submenu Select “feature”
Down/Minus		Navigate down in menu Decrease value
Up/Plus		Navigate up in menu Increase value
Power		Turn power on/off
Reset		Reset board to default values
2 color LED		Red/Blue

Hotkeys

Button	Direct access
Up/Plus	Source select
Down/Minus	Brightness
Select	Auto adjust

(Save please confirm)

OSD Status (external LED's)

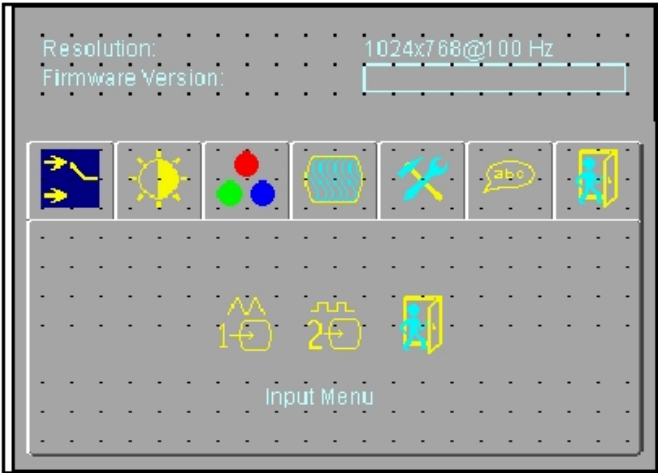
condition	Description
Amber flashing	Stand by
Blue flashing	Searching display mode (source)
Blue permanent	Ok
LED off	Power off (press power button 2 sec)

OSD Menu-Overview

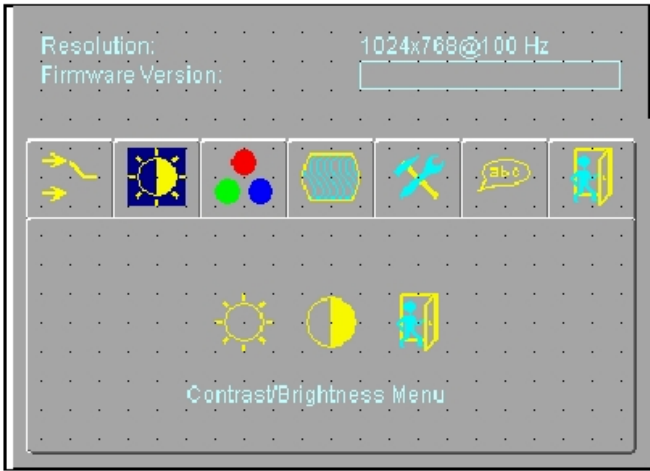
To activate OSD press key „Menu“

Menu <i>Inputs</i>	Menu <i>Contrast</i>	Menu <i>Color</i>	Menu <i>Image</i>	Menu <i>Tools</i>
RGB	Brightness	auto adjust	picture position auto adjust	OSD position
DVI	Contrast	color management	horizontal size	Factory reset
EXIT	EXIT	color temperature	tune phase	Reset - color
		advanced color correction	horizontal position	Reset - picture position
		color themes	vertical position	Sharpness
		EXIT	CVT override mode ³	DOS boot mode selection
			EXIT	EXIT

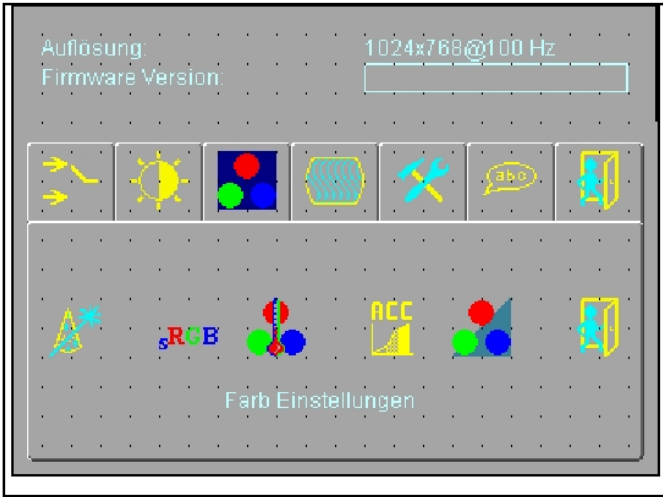
Menu INPUT

	Input Menu	RGB
		DVI
		EXIT

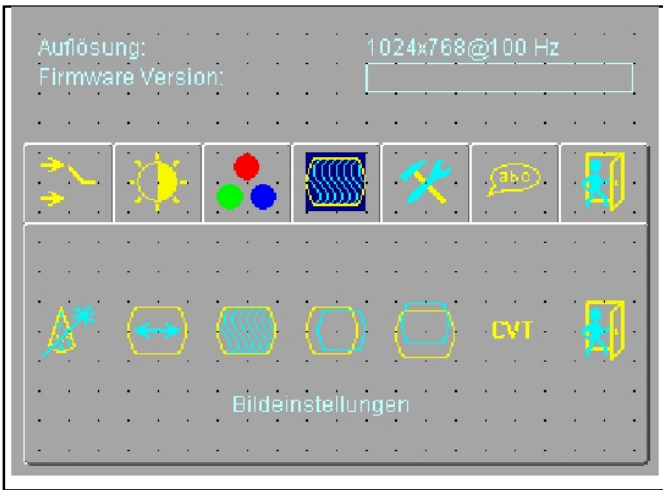
Menu Contrast / Brightness

	Contrast Menu	Submenu Brightness – adjust brightness
		Submenu Contrast – adjust contrast
		EXIT

Menu Color

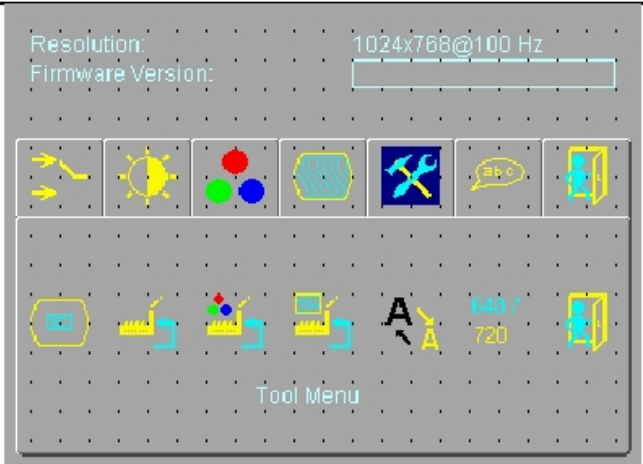
	Color Menu	color auto adjust
		Color management
		Color temperature
		Advanced color correction
		Color themes
		EXIT

Menu Image

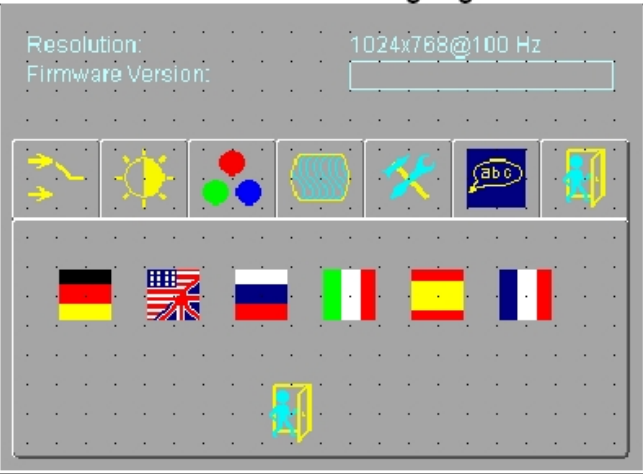
	Image Menu	Picture position auto adjust
		Horizontal size
		Tune phase
		Horizontal position
		Vertical position
		CMT override mode
		EXIT

³CMT override mode – only applicable to 1680 x 1050 resolution – if you encounter a problem with the correct display mode try this setting. CMT overrides the standard mode table.

Menu Tools

	Menu Tools	OSD Position
		Factory reset
		Factory reset color only
		Factory reset picture position only
		Sharpness
		DOS boot mode selection
		EXIT

Menu Language

	Language Menu	German
		English
		Russian
		Italian
		Spanish
		French
		EXIT

Operation and Repair

- Do a freeze-frame for a longer period may cause image-sticking-problems (see our notes in the support area on our website in FAQ)
- Before opening the device has to be switched off and disconnected from the supply voltage.

Opening the device must be performed by authorized personnel only!

- Note that even after switching off the supply voltage or pulling the plug high residual stresses may remain in the device. Accidental contact with charged parts and contacts may cause electrical shock and damage to the device.
- Do not insert any objects into the device. Foreign objects of any kind inserted through the housing, can lead to operational hazards and cause damage to equipment and persons.
- Do not spill any liquids into the interior. Should this happen anyhow, immediately unplug the unit from the power supply. Continued operation poses a fire hazard.
- Install extensions compatible to your system only. Other extensions can damage the device or change the EMC behavior.

Important:

- Subsequent installation of additional components or other modifications to the device lead to invalidity of the declaration of conformity for CE marking and the operator is responsible for any occurring problems.
- Immediately stop operating the device if you notice anything abnormal, such as smoke, noise or smell. Unplug the power cord and clarify the cause of malfunction before operating the device again.

EMC

- This is a class A device (industrial use). It may cause radio interference in housing areas. In this case, the operator might be charged to take adequate measures and be held responsible for it.
- This device serves as an installation component in an industrial application. The operator of the entire system is encouraged to maintain electromagnetic compatibility in accordance with the EMC Act.

Electrostatically sensitive components

Electronic components can be damaged or destroyed by electrostatic discharges. This doesn't have cause a breakdown of the module, it may also result in malfunctions! The following directions must therefore be followed strictly:

- Before working on an opened device a potential charge of the body has to be unloaded by touching the grounded housing parts.
- The same applies to (insulated) tools to be used, of course. They also have to be discharged by touching a grounded object.
- If you remove or add modules from the system, the device has to be switched off or disconnected from the power supply every time.
- You should always touch modules on the edge only. Touching the conductors and connector pins has to be avoided by any means.

Cleaning

- Disconnect the device from the supply voltage before cleaning. A dry cloth is sufficient for cleaning regularly. In case of stronger contamination, the main unit can be cleaned with a damp cloth and mild detergent (for CRT's only). No liquid must reach the inside of the case (open device).
- The use of scouring powder and dissolving detergent is strictly forbidden.
- The interior must be cleaned by the service technician only.
- Before getting the device into service it has to be completely dry (short-circuit, fire hazard).
- Since the surfaces of LCD's are very soft and easily scratched, please use a soft dry cloth for cleaning and do not use chemical cleaning agents.
- The torque of the fixing screw on LCD panels should never exceed 0.39 Nm.
- Please never expose the surface of a LCD to shock or friction as it could result in damage or scratch marks left on the surface.

Proper disposal of the product (electronic garbage) only from Europe

apply in the countries of the European union and other European countries with separate collection system.

The labeling on the product or on the accompanying literature indicates that it may not be disposed to regular domestic waste after its lifespan. Please dispose this device separated from other wastes to prevent harming the environment and human health from uncontrolled waste disposal. Recycle this device to assist the sustainable reuse of material resources.

Private users should contact the dealer where the product was bought or the competent authorities in order to get to know how to recycle this device in an environmentally friendly way.

Commercial users should contact their suppliers and consult the conditions of the sale agreement. This product must not be disposed together with other commercial waste

DANGER OF EXPLOSION

The flat screen is not intended for use in hazardous areas.

ATTENTION: Equipment damage

The flat monitor has to be mounted torsion-free. This also applies to the mounting brackets.

During installation and operation no pressure must be put on the LCD panel. This is achieved through an appropriate mounting device.

So-called OEM Monitors (OM-FLAT) have to be mounted in a way so there is no pressure put on the LCD panel even after the assembly. The glued rubber strip on special variants may therefore not be compressed more than 0,2 mm.

The regular mounting position is vertical. A maximum tilt angle of 45° must not be exceeded.

EMC and Safety Equipment

Compliance with standards and guidelines

Certification that the industrial monitors developed to meet the following guidelines that were adopted by the Council of the European Community, manufactured and tested were:

2004/08/EC Electromagnetic Compatibility

EN 61000-6-3 EMC - Emission (Residential)

- EN 55022 B Interference voltage (150kHz - 30Mhz)
- EN 55022 B Radiated field (30MHz - 1Ghz)

EN 61000-6-2 EMC-immunity (industrial area)

- EN 61000-4-2 ESD / Electrostatic Discharge
- EN 61000-4-3 HF-field [80 - 2500Mhz]
- EN 61000-4-4 Burst / fast transients
- EN 61000-4-5 Surge / powerful transients
- EN 61000-4-6 conducted RF-Field / circuit bound HF-field
- EN 61000-4-11 Power variations / Net equalization

EMC tests were performed with standard cables with line lengths up to 2.5 meters. Longer cables are used, then any further tests are required to demonstrate compliance with the EMC directive.

RF radiation from 1000 to 2500 MHz, 80% AM 1k Hz, 10 V / m verified.

2.5 GHz to 2.7 GHz, 80% AM with 1 kHz and 1 V / m is considered.



93/68/EWG (CE-marking)

2006/95/EC Low Voltage Directive

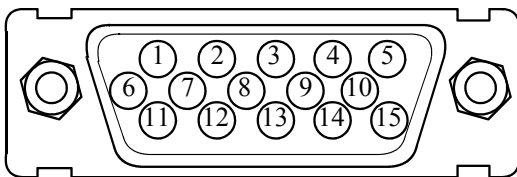
EN 60950 Safety

Only device matching the EN Standard 60950 may be connected to the existing interfaces. It is important to watch for "safe electrical isolation" to all the other tools / data buses.

Attachment

Pin assignment VGA

15-pole HD-Sub Mini DIN



Pin	Signal
1	Red
2	Green
3	Blue
4	GND
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	Nc
12	DDC Data / SDA
13	H-SYNC
14	V-SYNC
15	DDC Clock

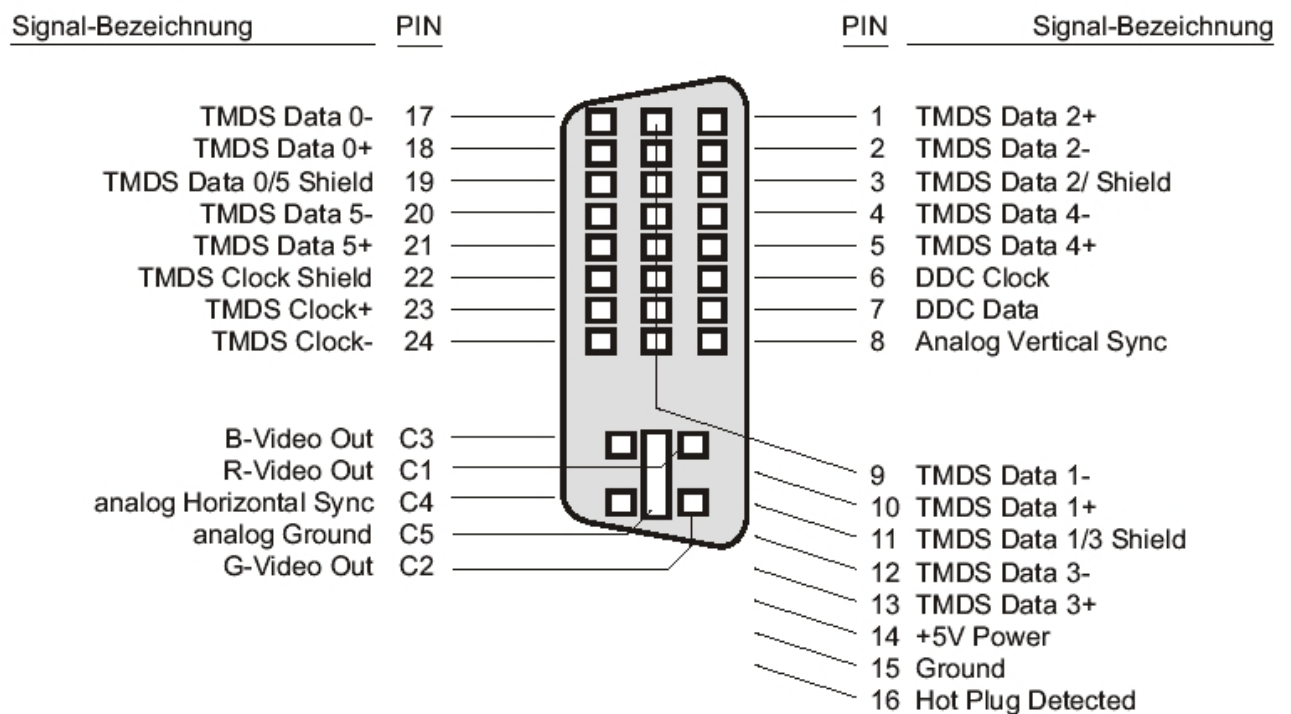
DVI

DVI-D

Dual Link



DVI - Videointerface



AC-supply unit

90 ~ 264 V AC



DC-connector 12 / 24 V

Phoenix

MSTB 2,5 / 2-STF-5,08



Ground bolt

Low Noise grounding earth function.

For proper function, especially in conjunction with capacitive touch.

